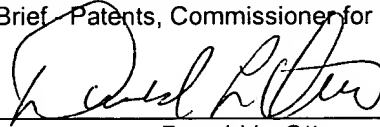




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Date: September 3, 2003


Donald L. Otto

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Attorney Docket LUMIP0128US

In re PATENT application of

Jeffrey B. Williams et al

Serial No. 09/935,958

Filed August 23, 2001

For: LIGHT DELIVERY SYSTEMS AND APPLICATIONS THEREOF

Art Unit 2875

Confirmation No. 1990

Jacob Y. Choi, Examiner

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APPELLANTS' BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This is an appeal from the decision of the Examiner mailed April 15, 2003 finally rejecting claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32. No other claims are pending in the application. An Appendix containing a copy of the claims on appeal is attached hereto.

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1. REAL PARTY IN INTEREST

The real party in interest is Lumitex, Inc., the assignee of the entire right, title and interest in and to the above application. This assignment was recorded in the USPTO on August 23, 2001.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which directly affect or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

This appeal is taken on all of the pending claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32.

4. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection of April 15, 2003.

5. SUMMARY OF INVENTION

The invention toward which the appealed claims are directed relates to the lighting device 3100 shown in Figs. 31A and 31B which includes a light distributor 3160 for receiving light from a light source and propagating light therethrough via internal reflection, and a light emitter 3110 for receiving light propagated by the light distributor and emitting a directional beam of light B from the free end 3112 of the light emitter. Surrounding the free end of lighting device 3100 is a sleeve 3180 which has an aperture 3182 in an outer end wall 3184 thereof through which the directional light emitted by the free end is beamed. As described in the paragraph bridging pages 35 and 36 of the specification, sleeve 3180 is axially movable in and out relative to the free

end to vary the size of the beam of light passing through the aperture 3182 to suit a particular application such as the size of the viewing area to be lighted. To that end, sleeve 3180 may be in frictional sliding contact with the free end 3112 of lighting device 3100 or may be threadedly connected thereto to permit relative axial movement therebetween by rotating/twisting one relative to the other.

The size of the spot of light beamed by the lighting device 3100 on a viewing area may be varied by moving the sleeve axially out and in relative to the free end to light a smaller or larger viewing area (page 36, lines 6-16). Also a lens 3186 may be placed over the aperture 3182 to focus the beam of light passing through the aperture in a desired pattern (page 36, lines 20-22).

Light emitters 3110 may also provide diffuse light in addition to a directional beam of light at the free end of the lighting device (page 35, lines 25 and 26). Moreover, a translucent or transparent protective outer sleeve 3170 may cover the light distributor 3160 and light emitters 3110 (page 35, lines 20-22). The protective cover 3170 has a closed end that covers the free end of the light guide and may be sealed against a connecting member 3162 attached to the end of the light guide remote from the free end as shown in Fig. 31A.

Lighting device 3100 may be flexible, and a malleable wire 3150 may be placed between the light distributor 3160 and/or light emitters 3110 and outer sleeve 3170 to permit that portion of the optic light guide 3100 to hold its shape once bent to a suitable position (page 35, lines 22-25). Also, a bracket 3188 may be integral with connecting member 3162 as schematically shown in Fig. 31A for attaching the lighting device to a patient or to an associated device using a suitable fastener 3190 (page 36, lines 23-30).

6. ISSUES

The following issues are presented for review:

Whether claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32 are unpatentable over Li et al (U.S. Patent 6,129,662) under 35 U.S.C. § 103(a).

7. GROUPING OF CLAIMS

For the reasons set forth in the argument which follows, not all of the rejected claims as grouped by the Examiner stand or fall together.

8. ARGUMENT

Appellants' contentions with respect to the issues presented for review, and the basis therefor, are set forth below.

The rejection of claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32 under 35 U.S.C. § 103(a)

Claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Li et al.

Claim 1 is directed to a lighting device including an optic light guide for receiving light from a light source and propagating light therethrough via internal reflection. As claimed, the light guide has a free end that emits directional light and a sleeve surrounding the free end having an aperture axially outwardly spaced from the free end through which a beam of light from the free end passes. Also the sleeve is selectively axially movable in and out relative to the free end prior to and during use of the device to vary the distance between the aperture and the free end to vary the size of the beam of light passing through the aperture.

Admittedly Li et al discloses an optic light guide 10 having a free end 16 that emits directional light and a sleeve 42 surrounding the free end having an aperture axially outwardly spaced from the free end through which a beam of light from the free end passes. However, exception is taken with the Examiner's statement that the sleeve 42 of Li et al is movable in and out relative to the free end prior to and during use of the device to vary the distance between the aperture and the free end to vary the size of the beam of light passing through the aperture. Column 3, lines 35-43 of Li et al simply describes the minimum variation in spacing (of between 0.001 inch and 0.1 inch) that may be provided between the light-transmitting window 32 and the light delivering end 16 of fiber optic member 10 shown in Fig. 3 so that light transmitted out port 34 and through window 32 raises the surface temperature of an adjacent surgical region less than about 55°C. when light is transmitted through window 32 to the region. It is submitted that such a minute variation in the spacing (of less than 0.099 inch) of the window from the light-delivery end of the fiber optic member 10 of Li et al would have no effect on the size of the beam passing through the aperture and sleeve 42. In fact, the aperture at the open end of the surrounding sleeve 42 of Li et al is flared outwardly so as not to restrict in any way the size of the beam of light passing through the free end to an adjacent surgical region 36 as shown in Fig. 1.

Moreover, as described in column 2, lines 61-64 of Li et al, the surgical tool 20 is fixedly connected to an intermediate section 30 of the body portion 12 of fiber optic member 10 by epoxy adhesive 44 as shown in Fig. 3. Thus in no event is the sleeve of Li et al selectively axially movable in and out relative to the free end of the light guide

prior to and during use of the device to vary the distance between the aperture and the free end to vary the size of the beam of light passing through the aperture as claimed.

The Examiner states on page 3 of the final action that the functional recitation that "during use of the device to vary the distance between the aperture and the free end to vary the size of the beam of light" has not been given patentable weight because it is narrative in form. However, there is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not in and of itself render a claim improper. See MPEP, Sec. 2173.05(g) and *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), cited therein.

Moreover, it is respectfully submitted that this particular functional language in claim 1 defines the claimed invention with a reasonable degree of precision and particularity and therefore is definite as required by 35 U.S.C. § 112. In a claim that was directed to a kit of component parts capable of being assembled, the Court held that limitations such as "members adapted to be positioned" and "portions ... being resiliently dilatable whereby said housing may be slidably positioned" serve to precisely define present structural attributes of interrelated component parts of the claimed assembly. *In re Venezia*, 189 USPQ 149, 151-152 (CCPA 1976). The same is equally true of the recitation in claim 1 that the sleeve is "selectively axially movable in and out relative to said free end prior to and during use of the device to vary the distance between said aperture and said free end to vary the size of the beam of light passing through said aperture". Since no such structural attributes of interrelated component parts of the claimed assembly are disclosed or suggested in Li et al, claim 1 is submitted as clearly allowable.

Claims 3, 5, 6, 8-15 and 32 depend from claim 1 and are submitted as allowable for substantially the same reasons. Moreover, claim 3 further patentably distinguishes over Li et al by reciting a lens attached to the sleeve and covering the aperture to focus the beam of light passing through the aperture by moving the sleeve (and thus the lens) in or out relative to the free end of the light guide. According to the Examiner, Li et al discloses a lens attached to the sleeve as claimed, citing column 3, lines 20-35. However, column 3, lines 20-35 of Li et al describes member 32 as a window of light-transmitting material which has a thickness sufficient to reduce the light density transmitted through the window and out port 34 of surgical tool 20 so that the surface temperature of adjacent surgical region 36 rises less than about 55°C. when light is transmitted through the window. Thus the window 32 of Li et al is not a lens covering an aperture to focus the beam of light passing through the aperture, much less by moving the sleeve (and lens covering the aperture) in and out relative to the free end of the light guide as recited in claim 3.

Claims 5, 6 and 8 further patentably distinguish over Li et al by reciting a translucent or transparent protective cover surrounding the light guide having a closed end that covers the free end of the light guide, with the sleeve surrounding the protective cover and being axially movable in and out relative to the protective cover. Exception is taken with the Examiner's statement on page 3 regarding claim 5 that the protective cover 42 that surrounds the light guide 10 of Li et al has a closed end that covers the free end of the light guide as claimed, and that the sleeve surrounds the protective cover 42 of Li et al and is axially movable in and out relative to the protective cover as claimed.

Moreover, claim 8 further patentably distinguishes over Li et al by reciting that the protective cover is sealed against a connecting member attached to the other end of the light guide remote from the free end. Neither of the connecting members 26 and 28 of Li et al is attached to the light receiving end 14 of the light guide. Instead, the connectors 17 and 49 are connected to the light receiving end, and in neither case is the protective cover sealed against these connecting members as claimed.

Claims 10-13 further patentably distinguish over Li et al by reciting that the support member for supporting the light guide is integral with a connecting member attached to the other end of the light guide remote from the free end. None of the support members 19 of Li et al is attached to the connecting member 49 at the other end of the light guide as claimed.

Claim 15 further patentably distinguishes over Li et al by reciting a malleable wire extending between a portion of the light guide, which is flexible, and a flexible protective cover surrounding the light guide, the malleable wire being bendable to hold the shape of the portion of the light guide once arranged in a desired position. The malleable stainless steel tube 22 of Li et al is not a malleable wire as claimed.

Claim 32 further patentably distinguishes over Li et al by reciting that the sleeve has an outer end wall axially outwardly spaced from the free end containing the aperture, and that the aperture has a substantially smaller diameter than the inner diameter of the sleeve adjacent the outer end wall. The open end of the surrounding sleeve of Li et al has no such outer end wall. In fact, the open end of the surrounding sleeve of Li et al is flared out so as not to restrict the beam of light on the adjacent surgical region 36 as schematically shown in Fig. 1.

Claim 16 is directed to a lighting device for illuminating a viewing area including a light distributor for receiving light from a light source and propagating light therethrough via internal reflection, a light emitter for receiving light propagated by the light distributor and emitting directional light from a free end of the light emitter, and a sleeve surrounding the free end of the light emitter having an aperture axially outwardly spaced from the free end through which the directional light from the free end is beamed. As claimed, the sleeve is selectively axially movable in and out relative to the free end of the light emitter prior to and during use of the device, which is clearly not disclosed or suggested in Li et al for the reasons previously discussed in connection with claim 1. Moreover, claim 16 recites that the sleeve contains a lens covering the aperture to focus the beam of light passing through the aperture by moving the sleeve and thus the lens in or out relative to the free end of the light emitter, which is also clearly nowhere disclosed or suggested in Li et al for the reasons previously discussed in connection with claim 3. Accordingly, claim 16 is submitted as clearly allowable.

Claims 19-23 and 25-30 depend from claim 16 and are submitted as allowable for substantially the same reasons. Moreover, claim 19 further patentably distinguishes over Li et al by reciting that the light emitter also emits diffuse light along a portion of the length of the light emitter immediately adjacent the free end. It is not seen wherein there is any such disclosure or suggestion in Li et al of this claim feature.

Claims 20-23 further patentably distinguish over Li et al by reciting a transparent or translucent protective cover surrounding the light emitter having a closed end covering the free end of the light emitter, with the sleeve surrounding the closed end of the protective cover and being axially movable in and out relative to the protective

cover, which is also clearly nowhere disclosed or suggested in Li et al for the reasons previously discussed in connection with claim 5.

Claims 29 and 30 further patentably distinguish over Li et al by reciting a malleable member extending along one side only of the light emitter which is bendable to hold the shape of the light emitter once arranged in a desired position. Also claim 30 further patentably distinguishes over Li et al by reciting a flexible protective cover surrounding the light emitter and malleable member, and that the sleeve surrounds the protective cover and is axially movable in and out relative to the protective cover. The malleable stainless steel tube 22 of Li et al does not extend along one side only of the light emitter, and the sleeve of Li et al that surrounds the protective cover is not axially movable in and out relative to the protective cover as claimed.

9. CONCLUSION

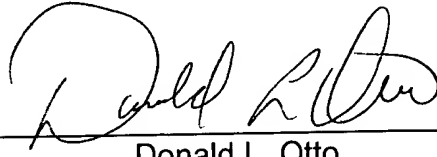
For the reasons set forth above, appellants respectfully request that the rejection of claims 1, 3, 5, 6, 8-16, 19-23, 25-30 and 32 on appeal be reversed and that such claims be allowed.

The Brief is filed herewith in triplicate, and the Appeal Brief fee of \$160.00 is enclosed herewith.

Please charge any additional fees or credit any overpayment to our Deposit Account No. 18-0988.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By 
Donald L. Otto
Registration No. 22,125

1621 Euclid Avenue
Nineteenth Floor
Cleveland, Ohio 44115-2191
Phone: 216-621-1113
Fax: 216-621-6165

APPENDIX

1. A lighting device comprising an optic light guide for receiving light from a light source and propagating light therethrough via internal reflection, said light guide having a free end that emits directional light, and a sleeve surrounding said free end, said sleeve having an aperture axially outwardly spaced from said free end through which a beam of light from said free end passes, said sleeve being selectively axially movable in and out relative to said free end prior to and during use of the device to vary the distance between said aperture and said free end to vary the size of the beam of light passing through said aperture.

3. The lighting device of claim 1 further comprising a lens attached to said sleeve, said lens covering said aperture to focus the beam of light passing through said aperture by moving said sleeve in or out relative to said free end of said light guide.

5. The lighting device of claim 1 further comprising a translucent or transparent protective cover surrounding said light guide, said protective cover having a closed end that covers said free end of said light guide, said sleeve surrounding said protective cover and being axially movable in and out relative to said protective cover.

6. The lighting device of claim 5 wherein there is an air interface between said protective cover and said light guide.

8. The lighting device of claim 5 further comprising a connecting member attached to an other end of said light guide remote from said free end, said protective cover being sealed against said connecting member.

9. The lighting device of claim 1 further comprising a support member for supporting said light guide.

10. The lighting device of claim 9 further comprising a connecting member attached to an other end of said light guide remote from said free end, said support member being integral with said connecting member.

11. The lighting device of claim 9 wherein said support member is shaped to fit a particular application.

12. The lighting device of claim 11 wherein said support member is used to attach said lighting device to a patient.

13. The lighting device of claim 11 wherein said support member is used to attach said lighting device to a surgical instrument.

14. The lighting device of claim 1 wherein said lighting device is a surgical lighting device.

15. The lighting device of claim 1 wherein said light guide is flexible, further comprising a flexible protective cover surrounding said light guide, and a malleable wire extending between a portion of said light guide and said protective cover, said malleable wire being bendable to hold the shape of said portion of said light guide once arranged in a desired position.

16. A lighting device for illuminating a viewing area comprising a light distributor for receiving light from a light source and propagating light therethrough via internal reflection, a light emitter for receiving light propagated by the light distributor and emitting directional light from a free end of said light emitter, and a sleeve surrounding said free end of said light emitter, said sleeve having an aperture axially outwardly spaced from said free end through which the directional light from said free end is beamed, said sleeve being selectively axially movable in and out relative to said free end of said light emitter prior to and during use of said device, said sleeve containing a lens covering said aperture to focus the beam of light passing through said aperture by moving said sleeve and thus said lens in or out relative to said free end of said light emitter.

19. The lighting device of claim 16 wherein said light emitter also emits diffuse light along a portion of the length of said light emitter immediately adjacent said free end.

20. The lighting device of claim 16 further comprising a translucent or transparent protective cover surrounding said light emitter, said protective cover having a closed end covering said free end of said light emitter, and said sleeve surrounding said closed end of said protective cover and being axially movable in and out relative to said protective cover.

21. The lighting device of claim 20 wherein there is an air interface between said protective cover and said light emitter.

22. The lighting device of claim 20 further comprising a connecting member attached to an end of said light distributor remote from said light emitter, said protective cover being sealed against said connecting member.

23. The lighting device of claim 20 wherein said light emitter and said protective cover are flexible.

25. The lighting device of claim 16 further comprising a support member for supporting said lighting device.

26. The lighting device of claim 25 wherein said support member is shaped to fit a particular application.

27. The lighting device of claim 25 wherein said support member is attached to an associated device.

28. The lighting device of claim 27 wherein said associated device comprises a surgical instrument.

29. The lighting device of claim 16 wherein said light emitter is flexible, and a malleable member extends along one side only of said light emitter, said malleable member being bendable to hold the shape of said light emitter once arranged in a desired position.

30. The lighting device of claim 29 further comprising a flexible protective cover surrounding said light emitter and said malleable member, said sleeve surrounding said protective cover and being axially movable in and out relative to said protective cover.

32. The lighting device of claim 1 wherein said sleeve has an outer end wall axially outwardly spaced from said free end containing said aperture, said aperture having a substantially smaller diameter than the inner diameter of said sleeve adjacent said outer end wall.